



7th grade Science Guide

2023-2024
SCI701/702 & SCI7010/7020

<http://grading.dmschools.org>

<http://science.dmschools.org>

Foreword

The purpose of this guide is to:

- Provide guidance for scoring student evidence.
- Identify pacing for evidence collection.

This curriculum guide is *not...*

- Used for designing instruction (you'll use your curricular materials for that – working through each lesson as designed).
- Meant to restrict your creativity as a teacher.
- A ceiling of what your students can learn, nor a set of unattainable goals.

Instead, the curriculum guide *is* meant to be a common vision for student learning and a set of targets and success criteria directed related to grade level standards by which to measure and report student progress and provide meaningful feedback.

The curriculum guide outlines the learning that is **most essential** for student success; it is our district's guaranteed and viable curriculum. The expectation is that every student in our district, regardless of school or classroom, will have access to and learn these targets. As the classroom teacher, you should use the materials within our adopted curriculum to help you to scaffold up to the learning targets and extend your students' learning beyond them.

Please consider this guide a living and dynamic document, subject to change and a part of a continuous feedback loop.

7th grade: Year at a Glance

Curriculum Access: [OpenSciEd](#)

Semester 1	Topic 1: Chemical Reactions & Matter	Topic 2: Chemical Reactions & Energy	Topic 3: Metabolic Reactions
Reporting frequency of topic scores	6 weeks	6 weeks	5 Weeks
Approximate beginning and end dates for the topics	8/28 – 10/6	10/9 – 11/21	11/27 – 1/12
Specific Pacing			Skip Lesson 4
Standards Aligned	MS-PSI-1 , MS-PSI-2 , MS-PSI-5 , MS-LSI-8	MS-PSI-6 , MS-ETSI-2 , MS-ETSI-3 , MS-ETSI-4	MS-LSI-3 , MS-LSI-7 , MS-PSI-2 , MS-PSI-1 , MS-LSI-5

Semester 2	Topic 4: Matter Cycling and Photosynthesis	Topic 5: Ecosystem Dynamics	Topic 6: Earth's Resources and Human Impact
Reporting frequency of topic scores	6 weeks	6 weeks	4 weeks
Approximate beginning and end dates for the topics	1/18 – 2/29	3/04 - 4/19	4/22 – 5/24
Specific Pacing	Skip Lesson 15 or 16 Note: Lab prep needs to be completed 30 days before the unit starts. Click link to read more.	Skip Lesson 19-20	Skip Lesson 2, 5, Lesson set 4 (13-18 - optional)
Standards Aligned	MS-LSI-6 , MS-LS2-2 , MS-PSI-3 , MS-LSI-2	MS-LS2-1 , MS-LS2-4 , MS-LS2-2 , MS-LS2-5 , MS-ESS3-3 , MS-ETSI-1	MS-ESS3-1 , MS-ESS3-5 , MS-ESS3-3 , MS-ESS3-4 , MS-ETSI-2

Standards-Referenced Grading Basics

Our purpose in collecting a body of evidence is to:

- Allow teachers to determine a defensible and credible topic score based on a representation of student learning over time.
- Clearly communicate where a student’s learning is based on a topic scale to inform instructional decisions and push student growth.
- Show student learning of targets through multiple and varying points of data
- Provide opportunities for feedback between student and teacher.

Start at Level 3 when determining a topic → score.

Evidence shows the student ...	Topic Score
Demonstrates proficiency (AT) in all learning targets and success at Level 4	4.0
Demonstrates proficiency (AT) in all learning targets with partial success at Level 4	3.5
Demonstrates proficiency (AT) in all learning targets	3.0
Demonstrates proficiency (AT) in at least half of the learning targets	2.5
Demonstrates some success criteria (PT) toward all learning targets	2.0
Demonstrates some success criteria (PT) towards some of the learning targets	1.5
Does not yet meet minimum criteria for the targets.	1.0
Produces no evidence appropriate to the learning targets at any level	0

Scoring

A collaborative scoring process is encouraged to align expectations of the scale to artifacts collected. Routine use of a collaborative planning and scoring protocol results in calibration and a collective understanding of evidence of mastery. Enough evidence should be collected to accurately represent a progression of student learning as measured by the topic scale. Teachers look at all available evidence to determine a topic score. All topic scores should be defensible and credible through a body of evidence.

*****Only scores of 4, 3.5, 3, 2.5, 2, 1.5, 1, and 0 can be entered as Topic Scores.**

Multiple Opportunities

Philosophically, there are two forms of multiple opportunities, both of which require backwards design and intentional planning. One form is opportunities planned by the teacher throughout the unit of study and/or throughout the semester. The other form is reassessment of learning which happens after completing assessment of learning at the end of a unit or chunk of learning.

Students will be allowed multiple opportunities to demonstrate proficiency. Teachers need reliable pieces of evidence to be confident students have a good grasp of the learning topics before deciding a final topic score. To make standards-referenced grading work, the idea of “multiple opportunities” is emphasized. If after these opportunities students still have not mastered Level 3, they may then be afforded the chance to reassess.

Guiding Practices of Standards-Referenced Grading

1. A consistent 4-point grading scale will be used.
2. Student achievement and behavior will be reported separately.
3. Scores will be based on a body of evidence.
4. Achievement will be organized by learning topic and converted to a grade at semester’s end.
5. Students will have multiple opportunities to demonstrate proficiency.
6. Accommodations and modifications will be provided for exceptional learners.

Anatomy of a Scale-

Unit Narrative:

Provide an overview and context of the unit, big understandings, and student experience—including by not limited to vocabulary, inquiry-based questions/concepts, pacing and number of lessons

Topic Title:

Named topic in infinite campus, with approximate number of paced weeks

Exceeding Grade Level (ET):

Possible level four task listed including prior learning, cognitive complexity, integrated skills, real world relevance: authentic application beyond the classroom.

Achieving Grade Level (AT):

Level 3 targets are listed within the topic scale and are the grade level expectation for students in all classes.

Success Criteria (listed below the target) should be clarified/ revised by the building level PLC as they collaborate to unpack the Level 3 targets.

Item Bank:

Linked resources for each learning target. Guiding/Inquiry questions, ideas, and/or concepts are below the base line examples to ensure district wide coherence.

Unit 1:		
Unit Narrative: In this unit, students		
Topic	Exceeding Grade Level (ET)	Achieving Grade Level (AT)
When collecting evidence related to the 3, it will be recorded in these topics in Infinite Campus.		The Level 3 Targets are the grade level expectation for students in all classes. Success Criteria (listed below the target) should be clarified/ revised by the building level PLC as they collaborate to unpack the Level 3 targets. Guiding Question to complete this process: What are the essential pieces of knowledge students need to have to show progression towards the grade level standard/expectation (level 3)?
Topic Title (weeks)	Possible Task: * *A level four task should include the following: prior learning; cognitive complexity; integrated skills; real world relevance; authentic application beyond the classroom.	LT1- Learning that shows evidence of progressing towards the grade level learning target: <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
		LT2- Learning that shows evidence of progressing towards the grade level learning target: <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
		LT3- Learning that shows evidence of progressing towards the grade level learning target: <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>

Item Bank:		
Target: Resources to teach:	Target: Resources to teach:	Target: Resources to teach:
Standard Language	Standard Language	Standard Language
Guiding Questions, Ideas, and/or Concepts Ideas and concepts in the spaces below are base line examples for all to use to ensure district wide coherence. Please add to these as you see instructional opportunities.		

Unit I: Chemical Reactions & Matter

Unit Narrative from [OpenSciEd](#)

Driving Question: How can we make something new that was not there before?

Topic	Achieving Grade Level (AT)
<p>When collecting evidence related to these targets, it will be recorded in this topic in Infinite Campus.</p>	<p>The Level 3 Targets are the grade level expectation for students in all classes. Success Criteria are provided below each target.</p>
<p>Chemical Reactions & Matter 6 weeks 8/28 – 10/6</p>	<p>LTIA- Construct a written explanation using evidence to describe the effect of the system when certain substances are combined. Learning that shows evidence of progressing towards grade-level learning target (success criteria):</p> <ul style="list-style-type: none"> <input type="checkbox"/> Analyze data to identify patterns of properties (density, melting point, boiling point, solubility, flammability) of substances. Addressed: Lesson 2-5 <input type="checkbox"/> Conduct an investigation to find evidence to determine which combinations of substances caused a gas to form in a system. Addressed: Lessons 4-6 <input type="checkbox"/> Analyze and interpret data on the properties of substances before and after they interact to determine if a chemical reaction occurred. Addressed: Lesson 2-6 <p>LTIB- Construct an explanation to describe why the total number of atoms does not change in a chemical reaction and thus mass is conserved. Learning that shows evidence of progressing towards grade-level learning target (success criteria):</p> <ul style="list-style-type: none"> <input type="checkbox"/> Develop and use models to describe the atomic composition of simple molecules and extended structures. Addressed: Lessons 7 and 8 <input type="checkbox"/> Construct an explanation for how the atoms in the molecules of the starting substances rearrange to form new products. Addressed: Lessons 7, 8, and 9. <input type="checkbox"/> Evaluate two different molecular models for different ratios of reactant and product molecules to support a claim. Addressed: Lessons 11 and 12 <p>LTIC- Construct an explanation to describe possible products in a chemical reaction from a set of known reactants by considering that the type of atoms in the chemical reactions should not change. Learning that shows evidence of progressing towards grade-level learning target (success criteria):</p> <ul style="list-style-type: none"> <input type="checkbox"/> Use molecular models to explain which products could be produced (patterns) from a chemical reaction. Addressed: Lessons 12-14

Resources

[Teams Folder](#)

Need more help? Check out the [Unit Webinar](#) for Teachers

LTIA

Assessment Opportunities

- Lesson 3:** Day 2 Investigation
- Lesson 5:** written arguments
- Lesson 6:** Assessment, question 3 and 4
- Lesson 12:** Assessment, question 3
- Lesson 14:** Assessment part 1, questions 1-5

LTIB

Assessment Opportunities

- Lesson 6:** Assessment, question 2
- Lesson 7:** task part 2, consensus model
- Lesson 10:** Written Explanation
- Lesson 12:** Assessment, question 1
- Lesson 14:** Assessment part 2 questions 1-3

LTIC

Assessment Opportunities

- Lesson 12:** Assessment, question 3
- Lesson 14:** Assessment part 2, questions 4 and 5

Consumable and locally sourced materials

[Review full list of materials here](#)

- Paper towels
- Empty 16.9 or 20 ounce soda bottle with cap
- Helium filled mylar balloon
- Distilled water
- Long wood matches
- Safety goggles
- Wooden Stir Sticks
- Vanilla Fragrance
- Lavender Fragrance
- Lemmon Essential Oil

- Calcium Carbonate
- Malic Acid
- Plastic Cup, 5oz
- Plastic condiment cup

Unit 2: Chemical Reactions & Energy

Unit Narrative from [OpenSciEd](#)

Driving Question: How can we use chemical reactions to design a solution to a problem?

Topic	Achieving Grade Level (AT)
<p>When collecting evidence related to these targets, it will be recorded in this topic in Infinite Campus.</p>	<p>The Level 3 Targets are the grade level expectation for students in all classes. <i>Success Criteria are provided below each target.</i></p>
<p style="text-align: center;">Chemical Reactions & Energy 6 Weeks 10/9-11/21</p>	<p>LT2A- Design a solution that meets specific design criteria and constraints.</p> <p>Learning that shows evidence of progressing towards grade-level learning target:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Define a design problem in a device that can be solved. Addressed: Lesson 1 <input type="checkbox"/> Conduct an investigation to support a chemical reaction that can transfer the most energy in the system. Addressed: Lesson 1-4 <input type="checkbox"/> Develop a model to describe unobservable mechanisms related to chemical reactions and the flow of energy in the system. Addressed: Lesson 3,4 and 10 <input type="checkbox"/> Analyze results from testing designs to modify designs to improve the flow of energy. Addressed: Lesson 4-6 <p>LT2B- Evaluate competing design solutions by using specific design criteria and constraints, including the transfer of energy.</p> <p>Learning that shows evidence of progressing towards grade-level learning target:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Apply scientific ideas to modify our designs based on test results to improve the flow of energy. Addressed: Lessons 6 and 7 <input type="checkbox"/> Provide and receive critiques about design solutions with respect to how they meet criteria and constraints. Addressed: Lessons 7 and 8 <input type="checkbox"/> Optimize performance of a design that transfers energy through a system by prioritizing criteria, making trade-offs, testing, revising, and re-testing. Addressed: Lessons 9-10 <input type="checkbox"/> Construct a written argument that evaluates competing design solutions based on criteria. Addressed: Lesson 10

Resources

[Teams Folder](#)

Need more help? Check out the [Unit Webinar](#) for Teachers

LT2A

Assessment Opportunities

- Lesson 2:** Progress tracker
- Lesson 3:** Energy transfer models
- Lesson 4:** Analyzing Our Data Collection Method
- Lesson 6:** Engineering Design Rubric
- Lesson 10:** Sea turtle assessment, questions 2a, 2b,

LT2B

Assessment Opportunities

- Lesson 6:** Exit Ticket and student designs
- Lesson 7:** Peer feedback
- Lesson 8:** Responding to peer feedback
- Lesson 9:** Revised design solutions with rubric
- Lesson 10:** Sea turtle assessment, questions 1a, 1b, 3a, 3b, 3c, 3d

Consumable and locally sourced materials

[Review full list of materials here](#)

- Construction paper
- Markers
- Heater Meal Heater and saline pouch
- Rubber bands
- Prepackaged MRE
- Hand warmer
- Styrofoam cup and lid, 9 oz
- Gloves
- Parchment paper
- Salt
- Baking soda
- Red cabbage powder

- Steel wool pad
- Vinegar
- Aluminum foil
- Cupric Sulfate
- Coffee filter
- Plastic cup and lid, 4 oz
- Water bead
- Ziploc gallon bag
- Ziploc quart bag
- Label dot
- [Copies of Lesson 3 Assessment](#)
- [Copies of Engineering Design Unit for Lesson 6 and 9](#)
- [Copies of Seas Turtle Assessment for Lesson 10](#)
- [Create a COPY of Surveys](#)

Unit 3: Metabolic Reactions

Topic Narrative from [OpenSciEd](#)

Driving Question: How do things inside our bodies work together to make us feel the way we do?

Topic	Achieving Grade Level (AT)
<p>When collecting evidence related to these targets, it will be recorded in this topics in Infinite Campus.</p>	<p>The Level 3 Targets are the grade level expectation for students in all classes. Success Criteria are provided below each target.</p>
<p>Metabolic Reactions 5 Weeks 11/27-1/12</p>	<p>LT3A- Develop and use a model to explain how different subsystems of the body work together to provide cells what they need to function.</p> <p>Learning that shows evidence of progressing towards grade-level learning target (success criteria):</p> <ul style="list-style-type: none"> <input type="checkbox"/> Create a model incorporating the appropriate components and interactions associated with a typical digestive system. Addressed: Lessons 7 and 8 <input type="checkbox"/> Use the model to explain how various subsystems in a healthy digestive system interact to move food through a series of chemical reactions to break down large food molecules. Addressed: Lessons 7 and 8 <input type="checkbox"/> Use the model to construct an argument and compare how an unhealthy digestive system can function differently from a healthy one. Addressed: Lessons 7 and 8 <p>LT3B- Develop and use a model to explain how food is rearranged in the body through chemical reactions to create energy, store matter and for growth in a system.</p> <p>Learning that shows evidence of progressing towards grade-level learning target (success criteria):</p> <ul style="list-style-type: none"> <input type="checkbox"/> Analyze and interpret data on the properties of substances before and after the substances interact to determine if a chemical reaction has occurred. Addressed: Lessons 5, 6, 8, 10 and 12 <input type="checkbox"/> Describe the composition of simple food molecules and complex structures within the model. Addressed: Lessons 8-13 <input type="checkbox"/> Create a model incorporating the appropriate components and interactions within the system. Addressed: Lessons 13 and 15 <p>LT3C- Construct an explanation based on evidence for how environmental factors, such as food intake, influence how energy is stored in an organism.</p> <p>Learning that shows evidence of progressing towards grade-level learning target (Success criteria):</p> <ul style="list-style-type: none"> <input type="checkbox"/> Develop a model to explain how matter rearranges in food through chemical reactions to release energy. Addressed: Lessons 14 and 15 <input type="checkbox"/> Develop an explanation using evidence that animals rearrange matter in food through chemical reactions to release energy. Addressed: Lessons 14 and 15

Resources

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LT3A

Assessment Opportunities

- Lesson 3:** Progress tracker
- Lesson 7:** Task Parts 1, 2, 3 Monitor the “Got to have it” checklist and the development of small group models.
- Lesson 7:** Task Part 9 Student Assessment
- Lesson 8 Part 3:** argue from evidence what’s causing M’Kenna’s symptoms

LT3B

Assessment Opportunities

- Lesson 13:** Task Part 2 monitor the creation of small group models
- Lesson 15:** Brown Bear Assessment

LT3C

Assessment Opportunities

- Lesson 13:** Task Part 7 student develop and individual explanation based off the class consensus model
- Lesson 15:** Brown Bear Assessment

Consumable and locally sourced materials

[Review full list of materials here](#)

- Tape, transparent
- Tea candle holder, aluminum, empty
- Chart paper
- Crackers, unsalted
- Highlighter
- Knife, plastic
- Marker, dark
- Paper, loose-leaf
- Pencil, colored
- Rice, white, cooked
- Ruler
- Scissors
- Spoon, plastic
- Sticky notes, 2x2"
- Taco shells
- Vegetable oil
- Water, distilled
- Water, natural sparkling natural mineral

- Amylase powder
- Benedict's solution
- Bromothymol blue solution, 0.04% aqueous
- Candle wick with metal anchor
- Corn starch
- Cup, 3 oz, clear plastic
- Cup, 8 oz, clear plastic
- Cup, 20 oz, plastic, clear
- Dental floss, 6" length
- Dialysis tubing, 1" width, 6" section length
- Duck fat
- Glucose powder
- Index cards, 3x5"
- Iodine solution
- Microcentrifuge tube with lid, 1.5mL
- Pipette, 3 mL, plastic disposable (eyedropper)
- Sticky dot, color #1
- Sticky dot, color #2
- Straw, flexible

Unit 4: Matter Cycling & Photosynthesis

Unit Narrative from [OpenSciEd](#)

Driving Question: Where does food come from and where does it go next?

Topic	Achieving Grade Level (AT)
<p>When collecting evidence related to these targets, it will be recorded in this topic in Infinite Campus.</p>	<p>The Level 3 Targets are the grade level expectation for students in all classes. Success Criteria are provided below each target.</p>
<p>Matter Cycling & Photosynthesis 6 Weeks 1/18 – 2/29</p>	<p>LT4A- Construct an explanation for the role of photosynthesis in the cycling of matter and flow of energy into and out of organisms. Learning that shows evidence of progressing towards grade-level learning target:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Develop a model to track the inputs and outputs of plants and incorporate how parts of the plant cell contribute to photosynthesis. Addressed: Lessons 1 - 8 <input type="checkbox"/> Develop and evaluate arguments from evidence to figure out where plants are getting the energy and matter to survive. Addressed: Lessons 4, 6, 7, 8, 11 <input type="checkbox"/> Construct an explanation for the central role of photosynthesis in the cycling of matter. Addressed: Lessons 8, 9, 10, 11 <p>LT4B- Develop a model to describe the cycling of matter and flow of energy among living and nonliving parts of an ecosystem. Learning that shows evidence of progressing towards grade-level learning target:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Use evidence to explain how matter is recycled within an ecosystem (by decomposers). Addressed: Lessons 13,14, 15 <input type="checkbox"/> Develop and use a model to explain that the major atoms that make up food (carbon, hydrogen, and oxygen) are continually recycled between living and nonliving parts of a system. Addressed: Lessons 13,14, 15

Resources

[Teams Folder](#)

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LT4A

Assessment Opportunities

Lesson 4: Task parts 2-6

Lesson 8: Midpoint Assessment

Lesson 11: Maple Tree Assessment

Lesson 15: Whale Fall Assessment, part 2, questions 1-3

LT4B

Assessment Opportunities

Lesson 13: Obtaining and Communicating Information Checklist

Lesson 14: Task part 5 - progress tracker, Task part 7 – The Story of a Food Atom

Lesson 15: Whale Fall Assessment, part 1, questions 1-3

Consumable and locally sourced materials

[Review full list of materials here](#)

- Large Lima Bean seed
- Maple Syrup
- Maple Water
- Dark Marker
- Microcentrifuge tube with lid, 1.5 mL
- Paper towel
- Potato
- Radish seed
- Radish with top
- Ziploc bag – sandwich, 1 gallon, 2 -gallon
- Spinach Leaves
- Spinach Seeds
- Plastic Spoon
- Sticky Dot
- Post-its
- Stirring rod
- Straw
- Tape
- Timer
- Transfer Pipette
- Vegetable Oil
- Distilled Water
- White bean

- Aluminum Foil
- Paper bag
- Benedict's Solution
- Biuret Solution
- Bromothymol Blue
- Can Opener
- Chart Paper
- Coffee Cup with lid, 12 oz
- Cup, 3 oz
- Food Labels
- Garbanzo beans
- Gloves
- Hydroponic Plant food
- Index Cards
- Iodine Solution
- Hydroponically grown lettuce
- [Copies for Lesson 4 Assessment](#)
- [Copies of Lesson 8 Midpoint Assessment](#)
- [Copies of Maple Tree Assessment for Lesson 11](#)
- [Copies of Lesson 14 Story of an Atom Assessment](#)
- [Copies of Lesson 15 Whale Assessment](#)

Unit 5: Ecosystem Dynamics

Topic Narrative from [OpenSciEd](#)

Driving Question: How does changing an ecosystem affect what lives there?

Topic	Achieving Grade Level (AT)
<p>When collecting evidence related to these targets, it will be recorded in this topics in Infinite Campus.</p>	<p>The Level 3 Targets are the grade level expectation for students in all classes. Success Criteria are provided below each target.</p>
<p>Ecosystem Dynamics 6 Weeks 3/04 - 4/19</p>	<p>LT5A- Analyze and interpret data to draw conclusions about how changes in resource availability affect populations in the short and long term.</p> <p>Learning that shows evidence of progressing towards grade-level learning target:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Engage in collaborative problem solving on how simple fixes to a problem are not a realistic solution Addressed: Lessons 1-5 <input type="checkbox"/> Plan and carry out simulated investigations to examine what organisms need to support healthy populations. Addressed: Lessons 8 and 9 <input type="checkbox"/> Engage in mathematical reasoning to draw conclusions about trends in population sizes over time, depending upon resource availability. Addressed: Lessons 7, 8 and 9 <p>LT5B- Construct an argument supported by evidence of how a disruption to an ecosystem affects populations.</p> <p>Learning that shows evidence of progressing towards grade-level learning target:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Develop a system model to explain how populations in an ecosystem interact to keep the system stable. Addressed: Lesson 11-13 <input type="checkbox"/> Gather information on how a change in population can affect a resource. Addressed: Lesson 12 and 13 <p>LT5C- Evaluate competing design solutions for maintaining biodiversity and ecosystem services.</p> <p>Learning that shows evidence of progressing towards grade-level learning target:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Gather information about farming approaches and ecosystems. Addressed: Lessons 14, 15 and 16 <input type="checkbox"/> Define the criteria and constraints of a design problem. Addressed: Lessons 16 and 17 <input type="checkbox"/> Apply scientific principles to design a method for monitoring a human impact on an ecosystem. Addressed: Lesson 16 – 18

Resources

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LT5A

Assessment Opportunities

- Lesson 3: Progress Tracker**
- Lesson 4:** Consensus discussion and Progress Tracker
- Lesson 7:** Monitor Discussion
- Lesson 8:** Progress Tracker
- Lesson 9:** Would planting more rainforest fruit trees help? Handout: Make Sense portion and progress tracker
- Lesson 10:** Monarch Assessment

LT5B

Assessment Opportunities

- Lesson 11:** Monitor end of Day 2 assessment
- Lesson 11:** Optional Progress Tracker
- Lesson 12:** Monitor Discussion
- Lesson 13:** Southwestern Willow Flycatcher

LT5C

Assessment Opportunities

- Lesson 14 - 15:** Synthesizing Notes
- Lesson 16:** Consensus Discussion
- Lesson 17 and 18:** Redesign the Land

Consumable and locally sourced materials

[Review full list of materials here](#)

- | | |
|--|---|
| <ul style="list-style-type: none">• Calculator• Chart paper• Clipboard• Colored paper (cardstock, construction paper)• Dry-erase whiteboard paper• Household food or cosmetic product containing palm oil• Marker, dark color• Markers, dry-erase• Pencil• Pencils, colored | <ul style="list-style-type: none">• Plastic bag, resealable, snack size• Sticky dot• Sticky note, 3x3"• Sticky note, 4x6"• Tape, transparent• Towel, rag, or paper towel• Copies of Lesson 6 Assessment• Copies of Lesson 10 Monarch Butterfly Assessments• Copies of Lesson 13 Southwestern Willow Flycatcher Assessment• Copies of Assessment for Lesson 17 and 18 |
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Unit 6: Earth's Resources and Human Impact

Unit Narrative from [OpenSciEd](#)

Driving Question: How do changes in the Earth's system impact our communities and what can we do about it?

Topic	Achieving Grade Level (AT)
<p>When collecting evidence related to these targets, it will be recorded in this topic in Infinite Campus.</p>	<p>The Level 3 Targets are the grade level expectation for students in all classes. Success Criteria are provided below each target.</p>
<p>Earth's Resources and Human Impact 4 weeks 4/22 – 5/24</p>	<p>LT6A- Construct an explanation to compare patterns that determine changes in the environment are caused by increasing temperatures. Learning that shows evidence of progressing towards grade-level learning target:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Analyze data to establish the long-term trends in climate variables. Addressed: Lesson 2, 3, 4 and 5 <input type="checkbox"/> Construct an explanation for how increased temperatures can cause changes to a community's water resources. Addressed: Lessons 2 and 5 <p>LT6B- Construct an argument supported by evidence for how increases in human population and per-capita consumption of natural resources impact Earth's systems. Learning that shows evidence of progressing towards grade-level learning target:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Argue from evidence that rising temperatures result from an imbalance in Earth's carbon system. Addressed: Lessons 8, 9 and 10 <p>LT6C- Clarify claims using scientific evidence about the connection between fossil fuel, the changing carbon system, and Earth's water system. Learning that shows evidence of progressing towards grade-level learning target:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Apply mathematical concepts to compare the carbon imbalance in the atmosphere. Addressed: Lessons 11 and 12 <input type="checkbox"/> Develop and use models to explain how fossil fuels causes change to climate and affect community water resources. Addressed: Lesson 12

Resources

[Teams Folder](#)

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LT6A Assessment Opportunities	LT6B Assessment Opportunities	LT6C Assessment Opportunities
Lesson 2: Day 3 – parts 3 and 4 of handout Lesson 3: Progress Tracker Lesson 5: Revised model Lesson 6: Alaska Wildfire Assessment	Lesson 7: Conclusion section on the Concentration of Gases Handout Lesson 8: Progress Tracker Update Lesson 10: Question 2 of population CO2 levels	Lesson 11: Monitor discussion Lesson 12: Social Media Post Assessment

Consumable and locally sourced materials

[Review full list of materials here](#)

<ul style="list-style-type: none">• Highlighter• Marshmallow, large• Heating pad, electric• Ice cube• Ice cube tray• Ice cube, carbonated• Ice cube, still water• Water, carbonated in clear bottle• Lighter, butane• Methane-based fuel gel• Chart paper• Marker, chart, dark color• Marker, permanent, black• Fastener tape, hook and loop• Hand warmer• Sticky note, 6x8"• Pipe cleaner• Plate, paper• Optional - Bromothymol Blue (BTB) indicator solution	<ul style="list-style-type: none">• Sticky dot• Sticky note, 3x3"• Sticky note, 3x5" or larger• Markers, chart, colored (set)• Bottle with cap, plastic, 2 L (empty)• Soil• Timer• Towels or sponges• Scissors• Pencils, colored (pack)• Paper, blank• Calculator• Copies of OPTIONAL student workbook• Copies of Lesson 5 Assessment• Copies of Lesson 6 Alaska Wildfires Assessment• Copies of Lesson 12 Assessment• Digital Dice Game COPY
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